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## United States Patent [19]

Martin et al.

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## [54] MULTIPLE LUMEN CATHETER

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[\*] Notice: The portion of the term of this patent subsequent to Mar. 23, 2010, has been disclaimed.

[21] Appl. No. 681,169

[22] Filed: June 7, 1995

(Under 37 CFR 1.47)

## Related U.S. Application Data

[63] Continuation of Ser. No. 205,331, Mar. 3, 1994, Pat. No. 5,472,617, which is a continuation of Ser. No. 715,251, Oct. 30, 1991, abandoned, which is a continuation of Ser. No. 288,364, Dec. 22, 1993, Pat. No. 5,195,962.

## [30] Foreign Application Priority Data

Dec. 22, 1987 [CA] Canada 533076

[51] Int. Cl. 4 A61M 3/00

[52] U.S. Cl. 604/43; 604/171; 604/280; 604/283

[58] Field of Search 604/43, 264, 280-283, 604/284, 101, 102, 164-169, 4-7, 174, 177-180; 138/111-117

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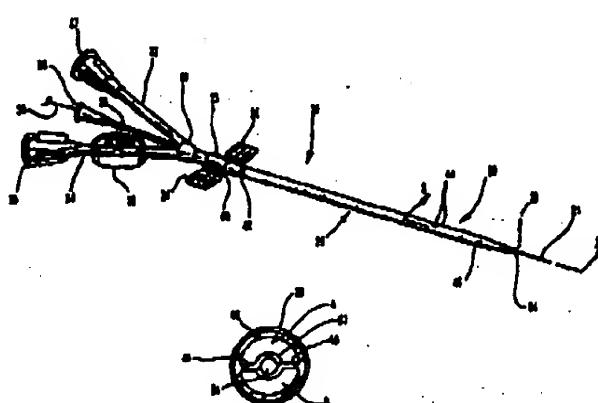
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## [57] ABSTRACT

The invention provides a cylindrical elongate body extending from a proximal to a distal end, the body defining two similar longitudinally extending lumens separated by a septum and a further lumen defined within the septum, a tip extending from the distal end of the body defining a part of the further lumen, a connector at the proximal end, tubes coupled to the connector and in fluid communication through the connector one with each of the respective lumens, the body defining openings providing access one to each of the longitudinally extending lumens, the openings being spaced from one another longitudinally of the body and the further lumen extending longitudinally beyond the longitudinally extending lumens and through the tip, the further lumen terminating at an opening at the distal end of the tip and the tip being convergently tapered as it extends longitudinally from the body and the longitudinally extending lumens being blocked immediately adjacent and distally of the openings.

23 Claims, 9 Drawing Sheets



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